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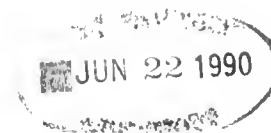
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UTILIZING HUMAN RESOURCES FOR STRATEGIC ADVANTAGE:
THE ROLE OF TRAINING

by

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As U.S. firms continue to face increasing international competition, deregulation, technological innovation, and changes in the demographic composition of the work force, they are being challenged to examine the skill formation process of their work force in order to increase productivity and remain competitive. Productivity growth in the United States in the 1970s and 1980s has lagged behind productivity growth in countries such as Japan, West Germany, Sweden, Italy and the United Kingdom. There are many reasons cited for this (see Bailey and Chakrabarti, 1988 for a comprehensive survey), but given that labor accounts for at least 70 percent of total costs, if "we could figure out a way to make labor 10 percent more efficient ... output per hour of work would rise by about 7 percent even with no increase in capital. Such an increase in labor productivity would soon pull investment along ... and the transitory increase in productivity growth would be impressive" (Blinder, 1990, p. 2).

There are various options and changes in organizational practice discussed in other papers in this book that, if implemented, would improve productivity. But a necessary condition for firms to gain competitive advantage through innovative human resource utilization is that the work force is well educated, highly skilled and broadly trained. Unfortunately, one of the major differences between the U.S. and its competitors is in the skill level and general training of the labor force. This paper will summarize recent research that has begun to examine the reasons behind our apparent corporate disadvantage in skill formation and present some examples of best practices in skill formation that illustrate possible methods for addressing this issue.

Part of the reason why we are in this productivity crisis is due to our

past successes. By defining jobs narrowly and making each job easy to learn, many U.S. firms obtained increased productivity through specialization and through the interchangeability of workers with limited skills and experience rather than training workers to become multiskilled. As technologies change and, as noted in other papers, the need for cross functional competencies and problem solving increases, so too does the demand for multi-skilled workers. Therefore, it is not surprising that the countries that are experiencing rapid growth in productivity today have typically followed an alternative model in which firms provide both general and firm specific skills to their workers. This creates a new type of flexibility in the work place which is more compatible with rapid technological change, new production techniques such as "just-in-time" and otherwise altered organizational structures. Broader skills training for all workers reduces the need for supervisors and allows the day-to-day management of the firm to be performed by workers rather than supervisors. This reduces the hierarchal structure of a typical firm dramatically. The provision of general skills training, however, is not an easy policy for U.S. firms to implement because unlike Japanese firms where "lifetime employment" leads to low labor turnover, U.S. firms run the risk of investing heavily in workers and losing them to competitors.

As the service sector continues to grow, there is increasing need for "knowledge workers" in professional and technical occupations. Traditional educational institutions have not always been able to deliver programs for these kinds of workers, especially in those industries characterized by rapid technological change. Highly skilled technical jobs in professional occupations such as computer, mathematical, and operations research analysts are forecasted to grow by 52 percent and jobs for technicians and related support occupations are expected to increase by 32 percent by the year 2000 in the

U.S. (U.S. Department of Labor, 1989). At the same time the majority of new workers will be minorities with the highest high school dropout rates or women who, as a group, have historically been underrepresented in those occupations with the largest amounts of on-the-job training. Therefore, companies will find themselves required to develop costly internal training programs in order to remain competitive and to cope with the skill needs of their new workers in the next decade.

The skill acquisition and formation issues discussed in this paper are closely linked to the human resource innovations presented in the Kochan and McKersie paper. A well structured skill acquisitions or human resource development policy is a necessary precondition for a human resource strategy that seeks to more fully utilize labor. Thus, the investment in workers' training must be seen as an essential part of an overall human resource management strategy that links selection, training, career planning, compensation, performance appraisal and employment security.

This paper summarizes the findings of a more detailed survey (Lynch, 1989b) on the role of the private sector in the skill development of workers in the U.S. and expands on Lynch (1989c). The paper begins with a brief summary of the trends in the demographic composition of the workforce and the implications of these trends on the training policies of firms. It then discusses who needs training, who provides training, who pays for it, some innovative 'trainers' in the private sector in the United States and finally, the structure of training programs provided by the private sector in other countries. It concludes with a brief discussion of policy issues for private sector training in the U.S..

WHO ARE THE WORKERS OF THE FUTURE?

Seventy percent of those projected to be working in the year 2000 in

the U.S. are already in the labor force. By the year 2000, as forecasted by the Department of Labor (1989), there will be several changes in the composition of the work force. For example, the age distribution of the work force will change quite substantially. Specifically, the 'baby bust' will continue with young workers aged 16-24 representing only 16 percent of the labor force in the year 2000 versus 19 percent in 1988 and 24 percent in 1976. At the same time the 'baby boomers' will be aging resulting in the share of those 35-54 in the work force rising from 40 percent in 1988 to 49 percent by 2000. However, the relative share of workers over the age of 55 will remain constant over this period of time.

Women's labor force participation will continue to rise with women representing 47 percent of all workers in the year 2000 as compared with 45 percent in 1988 and 41 percent in 1976. The share of the labor force composed of minorities will also increase by 2000. Blacks will represent 12 percent of the work force in 2000, up from 11 percent in 1988 while Hispanics will go from 7 percent of the labor force in 1988 to 10 percent in 2000. Asians and other remaining minorities will increase from 3 to 4 percent from 1988 to 2000.

All of these compositional changes are the result of two factors - the characteristics of new entrants into the work force and the characteristics of those who leave the work force. A higher percentage of white males will be exiting the labor force from now to the year 2000 while the number of new entrants who are women, Afro-American, Hispanic or Asian will be almost 70 percent. This represents a dramatic increase in the diversity of workers in the labor force and it poses many challenges with regards to training.

WHO NEEDS TRAINING?

Given these demographic changes and changes in product demand and

technology, who needs training? There are four primary types of workers who need training. These include new entrants into the labor force, permanently displaced workers, employed workers, and long-term unemployed workers. New entrants into the labor force are made up of three sub-groups, each with varying stocks of skill and new skills needs. These groups are composed of young people entering the work force for the first time, re-entrants (e.g. women) into the labor force who may have worked in the past and are well educated but have been out of the labor force for a period of time, and immigrant workers who come with a variety of skill levels, work experience and proficiency in English.

The second type, permanently displaced workers, may have been displaced as a result of technological change in their industry or occupation, or to changes in demand due to increased technological competition or deregulation. The third type of workers includes those who are employed but who need training for promotions, maintenance of already acquired skills, or new jobs due to redeployment within the firm. The final category of workers with training needs is the long-term unemployed. Obviously, the range of company and government training programs that need to be provided to these four types of workers varies substantially. For example, as mentioned earlier, the occupations which are expected to grow the most over this period of time are in high tech areas which require post-secondary education and/or training. However, minorities, who will represent an increasing percentage of new entrants, are not well represented in these occupations at the moment and they also have much lower high school and college completion rates than their white counterparts. Firms will need to develop more general training programs to enable these workers to get on track within their organizations.

Companies in the U.S. extensively train their workers, but their

training policies have focused primarily on developing formal training programs both within the firm and off-site for young workers, re-entrants, those who are being promoted, those needing skills maintenance, and those who are being redeployed. Firms also provide extensive informal training to new workers, but typically with little knowledge of how much is being done, who is receiving it, who is providing it, and when, how much time it takes, and how much it costs. Seldom do firms assess the economic returns to either their formal or informal training programs. Most of the firm-provided training in the U.S. is quite specific to the particular needs of the firm or work site. More general training is left to what workers acquire on their own in the education system before they enter the work place, or to training they receive from schools (community colleges or night schools), or proprietary institutions, such as vocational and technical institutions, after they have left school and begun to work.

In summary, there are four groups of workers who have very different training needs. New entrants typically need more general skills training (such as quantitative skills) that are relevant for a broad group of employers, while those already employed need more firm specific skills development. Table 1 summarizes the differences in the need for general and firm specific skills for these workers.

TABLE 1

Who Needs Training	General Skills	Firm Specific Skills
1.) New entrants		
a.) youths	**	*
b.) women	*	**
c.) immigrants	**	*
2.) Displaced workers	*	**
3.) Employed Workers		
a.) promotion		**
b.) redeployment	*	**
4.) Long Term Unemployed	***	

WHO PAYS FOR AND WHO PROVIDES TRAINING?

More general training is typically paid for by the individual employee rather than the firm. Human capital theory would predict that firms would be willing to provide general training to their employees if the employees were willing to work for lower wages to pay for this training. If, however, due to minimum wages or social norms this is not possible firms traditionally are reluctant to pay all the costs for general training since they can not "capture" the return on their training investment. Another employer could induce a recently trained employee to leave ("cherry picking") and then the first employer is left with the training cost but no worker. Recent changes in the structure of minimum wage laws have attempted to address this issue by allowing a lower "training wage" for the first six months of employment to encourage more general training.

On the other hand, employees are not willing to pay for firm specific training because there is often little portability of these skills to other employers. In this case firms are expected to pay for this type of training. If workers are constrained in their ability to acquire general training (due to

limited resources or access to training providers) and firms are reluctant to pay for most general training then we run the risk of a market failure in the provision of general skills development.

While there have been few representative samples of firms with regards to their training policies, Bartel (1989), Barron et. al. (1987) and Bishop (1989) have found using company based data that: large firms are more likely to provide training than small firms; formal training programs are just one part of a well developed internal labor market; and large employers appear to be paying for a portion of general training costs in the U.S. but those firms with higher turnover rates lower the amount of general training provided.

Table 2 presents a summary of the distribution of general and specific skills by who pays and who provides training:

TABLE 2

<u>Who Pays/Who Provides</u>	<u>General Skills</u>	<u>Firm Specific Skills</u>
1.) 'EE/Firm	* *	*
2.) 'EE/Proprietary School	* *	
3.) Firm/Firm	*	* *
4.) Firm/Proprietary School	*	*
5.) Govt/Firm	*	*
6.) Govt/Proprietary School	* *	

When Tables 1 and 2 are examined side by side it is apparent that if the responsibility for skill formation is left largely to say the government, then those workers needing firm specific skills will be 'under-trained'. However, if the responsibility for training is left exclusively to firms, then due to the difficulty of capturing general training investments, those workers who need general skills training may be 'under-trained'. Therefore, it is critical to

develop a policy which balances the training needs of different types of workers with the constraints faced by those who pay and provide training.

WHO RECEIVES TRAINING?

There has been relatively little empirical work on the impact of private sector training on the careers of workers compared with the numerous studies on the impact of government training programs. The few studies that have been done have used data from surveys of individual workers and company based surveys (Lillard and Tan, 1986 and Lynch, 1989a). The findings of these studies can be succinctly summarized as follows: (1) while there is not a significant difference in the probability of males and females receiving any type of training, males are more likely to receive on-the-job training and females off-the-job training; (2) nonwhites are less likely to receive on-the-job training than whites, holding all other characteristics constant; (3) the likelihood of receiving company provided training drops when there is high unemployment; (4) not completing high school significantly lowers the probability of receiving training; (5) company provided training is not very portable from employer to employer for young workers; (6) being in a union significantly raises the probability of receiving on-the-job training; (7) managers, professional and technical employees are most likely to receive company provided training; and (8) rapid technological change in the industry of employment increases the probability of receiving in-house company training programs.

The rates of return to training on wages are quite substantial. For example, Lynch (1989a) finds that the wages of young workers with training rose 11 percent per year whereas an additional year of tenure on the job without any training only raised wages by 4 percent. Mincer (1989) has found similar rates for young workers who receive training but finds that

older workers who receive training receive only a 3.6 percent increase in their wages. In summary, although there needs to be even more information gathered on the provision and returns to private sector training, we can say that while the individual returns to this type of training appear to be substantial, this training is unevenly distributed across individuals and firms. This variance in the amount and type of training firms provide, together with the relatively high turnover rates of American workers, has led to the concern that there is 'underinvestment' in training in the U.S.

INNOVATIONS IN TRAINING IN THE U.S.

This section briefly highlights some specific examples of innovations in training programs in the U.S., including the successes and difficulties that these programs have encountered. The firms described here are not the only innovative organizations in the U.S., but the experiences of these organizations captures some of the key organizational issues surrounding private sector training.

In the previous section four types of workers were identified who need training. The long term unemployed are traditionally trained through government programs in the U.S. so I will focus on private sector training programs directed towards the other three groups of workers. Special attention will be given to the obstacles that need to be overcome in order to increase the diffusion of these types of firm training policies.

New Entrant Training. Designing training programs for new entrants, especially minority youths who have not completed high school or gone on to post-secondary school, is particularly challenging. The Federal Reserve Board of Boston, however, has offered training in basic business skills to 10 to 15 new inner-city employees every year since 1973 in their Skills Development Center (see Hargroves, 1989 for a complete description). The participants in

this program were primarily minority, female and young and the program trains these individuals for entry-level clerical positions within the Bank. The participants were first involved in an academic program to learn basic skills and new clerical skills. At the same time they are given temporary work assignments so that they could begin to acquire valuable work experience. Once basic skills were acquired the trainees tried a specific job and if the job match was successful they were transferred to this job, otherwise they returned to the Skills Center. The average cost of training per worker was \$7000. The Bank concluded that while the savings of such a program were not large the program did ensure a sufficient supply of clerical workers in a very tight labor market. One of the difficulties the Bank had, however, in quantifying the costs and benefits of such a program was to identify all of the "savings" of such a program. Quantifying the returns to training is as difficult as attempting to quantify the long term benefits of research and development. The long term gains are often elusive to quantify in the short run while the calculation of the immediate costs is relatively straightforward. This problem of evaluation serves to limit greater diffusion of programs such as this.

Training for the currently employed. IBM has developed over the years a very sophisticated approach to skills development within its organization. This "Systems Approach to Education" tries to divide the training process into a series of manageable steps and facilitate careful decision making and budget planning at each stage to maintain cost control of training. IBM has developed detailed curricula for every major job category and the company uses classrooms, interactive videodiscs, self study, supervised self study, computer-based training, tutored video and satellite classrooms (see Casner-Lotto, 1988 for additional information) for its training programs. One of the key features of this program is its flexibility to adopt to the different

needs of the employees and the company.

Displaced and Redeployed Worker Training. While the IBM "Systems Approach" is a useful model for skills development associated with natural promotion within an organization, other innovations in training have occurred in organizations that find themselves redeploying workers due to changes in product demand or technology. Three examples of these types of training initiatives include the experience of the computer, telephone and auto industries. For example, Digital in 1985 introduced its "Transition Process" to deal with overstaffing in the company (see Kochan et. al., 1988 for a complete discussion of this). The process was divided into three stages: 1.) selection of "available" employees; 2.) counselling and training; 3.) exit from the program to another job at DEC or outside the company. DEC found that many employees were unwilling to take the risk of training for a new occupation since they were convinced that the downturn would be short and that they would be recalled to their old jobs. Thus only about 15 percent of those offered training chose this option. An important lesson from this case, therefore, is that most employees do not respond well to training opportunities that are presented to them in a crisis situation. It takes an ongoing commitment to skills upgrade to create a successful training and development program. However, the company found that the Transition Process had preserved its reputation as a firm committed to employment security and this resulted in higher morale and loyalty during a difficult period.

Both the auto and telephone industries have reached innovative joint company-union agreements with regards to the role of training in the organizational changes both of these industries are undergoing. For example, BellSouth and the Communication Workers of America agreed to a Career Continuation Program which took workers who were about to be laid off and

enrolled them into this program with pay and benefits. In addition, the program reimbursed up to \$2500 for items such as tuition and books for courses both within and outside BellSouth. The program was an attempt to maintain a commitment to the employees to preserve jobs but at the same time implement a massive reorganization of the company due to deregulation and changes in technology (see Lynch and Osterman, 1989 for additional information). One of the advantages of this program was that there was a cap on how many weeks an employees could participate. If at the end of a predetermined period they had not transited into a new job their final severance was reduced by the number of days in the program. The hope was that the employees would feel that they were making a financial investment in the program as well as the company and that this would increase the effectiveness of the program.

The auto industry since 1982 has also had joint training programs for the skills development of active and displaced workers. For example, the UAW-Ford agreement established an employee development and training program that differed from the well established internal training programs in the company such as apprenticeships. Instead, this program provided tuition assistance for new job training outside Ford, assisted active employees with advice and programs for their future both within and outside Ford, and training and counseling in high school completion. One unique feature of this program was that the company agreed to finance general skills training to employees who might eventually leave the firm. The auto industry has been a path breaker in the U.S. for the provision of general skills training but it is not clear that this is a practice that should or will be emulated in other industries or in smaller firms.

INTERNATIONAL COMPARISONS

There are some distinct differences in the training policies and training institutions in countries such as West Germany, Sweden, Great Britain and Japan from those in the United States. For example, the West German system of vocational training schemes, or its 'dual system', is often cited as one of the primary forces behind its high productivity growth (see Disney, 1989 and Prais and Wagner, 1983 for reviews of the West German system). The West German system trains individuals in specific skills, but perhaps more importantly, it teaches young workers that they will have to learn many new skills over their career. Training in West Germany, however, is not just restricted to the apprenticeship scheme for school leavers. There are many other types of training programs which the government has created to assist adult workers in retraining. These include a voucher system for training, and wage subsidies to firms providing on-the-job training. Adults may enter a certified training course where the training institute is reimbursed by the government for all of the costs of training. The individual may also receive a subsistence allowance which is earnings-related in the form of a grant or loan. In addition, the government supports individual firms providing training through a wage subsidy which is paid to the firm.

In Sweden, training is just one component of a very broad economic policy to promote full employment. Since the early 1980s there has been an expansion of resources devoted to providing in-house training programs to prevent job losses (see Standing, 1988 for a review of the Swedish model of training). In addition, there have been subsidies given to firms who provide training for men or women in occupations that are over-represented by one sex or the other (Sweden has greater occupational segregation than the U.S. even though the female/male wage differential is around 90 percent). Perhaps the most innovative and controversial policy was the passage in 1984 of

legislation creating "Renewal Funds" whereby large establishments must put ten percent of their net profits into a fund for research and training. Rather than raising taxes and using the revenue to provide government training programs, the government has instead required firms to set aside a minimum designated explicitly for training. The approach, therefore, in Sweden is to encourage firms to regard investments in training the same way that they regard investments in research and development.

The current government in Great Britain has recently proposed dramatic reforms to promote employment growth into the 1990s (U.K. Department of Employment, 1988) that focus on the importance of private sector training. Noting that seven out of ten of the employed workers in the year 2000 in Great Britain are already employed and that most of these workers have left school at the minimum age of 16 and have not acquired any qualifications since then, the government has established Training and Enterprise Councils (TECs). These councils will plan and deliver training programs at the local level. Specifically, they will assess the skill needs of their local labor market, identify prospects of expanded job growth and the availability of appropriate training programs in the local area. They will then manage training programs for young people, the unemployed, and employed adults requiring new knowledge and technical retraining. There will also be additional support for small firms. At least two-thirds of the TEC members will be top management employers and the remaining members will be senior figures from local education, training and economic development agencies, and trade unions who support the aims of the council. There is, however, no mandatory role for any group other than the employers. This differs then from the German system where there is a mandatory role for groups other than employers, especially the trade unions. In fact, the British government

states that it hopes to "place 'ownership' of the training and enterprise system where it belongs - with the employer" (U.K. Department of Employment, 1988 pp. 40).

The basic educational system in Japan focuses on providing a high level of very general skills to its graduates (Sako and Dore, 1988). Therefore, more firm-specific skills must be taught at the firm level. Most of that instruction is done by the supervisor who has the responsibility of teaching and motivating subordinates. Some firms even measure a group's performance by what percentage of the workers can do multiple tasks. Interestingly, most off-the-job training in Japan takes place through correspondence courses. As in Germany, skills testing is an important component of training. There are testing centers in every prefect in Japan. Under Japan's Vocational Training Law, prefect governors can authorize training programs developed by employers, unions, and employer associations. Local and national governments are also required under this law to provide financial assistance to employers and employees participating in in-house training. These take the form of traineeship loans, financial assistance to firms with less than 300 employees, incentive grants for paid educational leave, and professional advisory and institutional services (Inoue, 1985). As in the U.S., most training is done by large firms, but smaller firms are more likely, in Japan, to try to pool their resources than in the U.S..

POLICY ISSUES FOR PRIVATE SECTOR TRAINING IN THE U.S.

U.S. firms face a variety of issues and challenges as they reexamine the way in which they train and retrain their workers. The old model of mass production which generated narrow job definitions, low skill levels, and a reliance on informal training of firm specific skills is not an effective structure for newer production techniques which require multiskilled workers

such as those described in the MacDuffie and Krafcik paper in this volume. In addition, as the service sector continues to grow there is increasing need for "knowledge workers" in professional and technical occupations. If new entrants into the labor force or older workers with limited general skills do not have the qualifications for these new technical jobs, firms will have to decide whether to train these workers or to hire qualified workers outside the firm (if they are available). This is a difficult decision because unlike Japanese firms where "lifetime employment" leads to low labor turnover, U.S. firms run the risk of investing heavily in workers and then losing them to competitors. Another option would be to move production to those countries that can supply the necessary skills (although even in Europe one of the major policy issues is "skills mismatching"). Whatever decision is made, if the "skills-gap" is not addressed, U.S. firms will continue to have low productivity growth.

Given the variety of workers who have training needs and the range of types of training that they need (from firm specific to general training) as shown in Tables 1 and 2, it is not possible to identify one training strategy that will be effective in improving competitiveness. Rather, there exists a "menu" of options for employees and employers to choose from. For example, until now, U.S. firms, especially those in manufacturing, have relied on an informal system of training workers with workers learning "on-the-job". However, workers who want to enter into the growing technical and professional occupations are not going to be successfully trained in this informal system. There are few training centers prepared to train these new technical and professional workers. Therefore, many firms, especially larger firms, have chosen to invest in the training of workers in-house. But often these companies have difficulty in justifying or evaluating the various training

programs they offer. A large part of this is due to the difficulty in measuring the costs and benefits of various training programs. For example, do the costs of training include just the direct costs of providing teachers, materials, and tuition to run a course, or do they also include indirect costs such as lower productivity and wages paid during training? How does a company measure the costs of informal training?

For those who choose to train in-house many develop their programs with the assistance of outside training vendors. Typically, the vendors are asked to evaluate the effectiveness of their training course. Apart from the moral hazard problem associated with having the vendor evaluate the course, the evaluation criteria often focus on how "happy" the participants were with the course rather than on actual measures of post training performance. While it is important to evaluate the effectiveness of training programs, many firms are reluctant to do this because they are concerned that a formal cost/benefit analysis will not measure the longer term benefits of training. However, firms make these sorts of evaluations for investments in research and development all the time, so perhaps it would be appropriate for firms to evaluate training investments the same way they consider evaluating investment decisions in R & D.

While in-house training programs may be effective for currently employed workers, the training issues associated with new entrants are closely linked to the quantity and quality of the educational system that these young workers come from. Therefore the establishment of links between the business community and local schools may result in upgraded schools and consequently firms would be more able to invest in incremental skills training because the ability to learn would be higher. One example of such a program is the Boston Compact which was an agreement signed in 1982 between business

leaders, public educators and local government officials to improve the quality of education in order to enhance the skill levels of Boston high school graduates entering the workplace. This program has been so successful that the National Alliance of Business has replicated the Compact in ten metropolitan areas across the country.

In-house training programs and business/school links will not be sufficient to address all training needs. The encouragement of regional and industry consortia to clearly identify training and workforce needs and communicate these to local community colleges and vocational educational schools or proprietary institutions could greatly assist the skills development of displaced workers and those currently employed. In particular, smaller companies have limited resources to provide training, but at the same time often have the greatest training needs for multiskilled workers. Most of the employment growth in the U.S. in the 1980s and 1990s has been and will continue to be in small businesses. By pooling their resources to set up programs that provide the training for common skills needs these smaller firms can greatly improve their productivity at a modest cost. Employers in Europe have had much more experience than U.S. employers in working in confederations to develop these kinds of programs.

Another option that has been proposed in the U.S. to assist firms who wish to train their workers but who do not have the resources to do this is to give various tax breaks or subsidies to firms who train. While this may address the problem of how to encourage firms to provide more general training when labor mobility is high, there are some limitations with this type of policy. For example, should firms who receive subsidies be monitored to make sure that they are using the money for training or for training they would not have otherwise provided? Are subsidies alone sufficient to help

smaller firms? Would expansionary macroeconomic policies be more effective in raising the skill levels of workers?

Much of the recent policy discussion has focused on "privatizing" training - i.e. to shift the burden of training and development to private sector employers. While there are advantages of this strategy such as increased relevance of training programs, there are possible dangers to a training policy that relies exclusively on the private sector. As discussed earlier in this paper, firms have an incentive to provide very firm specific training but are more reluctant to make massive investments in general skills development. One option to encourage more of this is for public policy to encourage joint participation -- the consultation of workers in the design and administration of any training subsidies granted to firms. This would help insure that subsidized training is a supplement to and not a replacement for the firm's specific training expenditures. Perhaps some demonstration projects should be encouraged along these lines.

Employers, schools and government are not the only players who could participate in the provision of training. Labor unions should also consider becoming more vocal advocates in collective bargaining for expanded joint training programs. This could be an important component of the activities labor uses to represent current members and to recruit new members.

Finally, it is important to note that it would be a mistake to simply implement what appears to be best practice in training without understanding how training fits within a broader human resource management strategy. In other words, no firm is likely to have a successful investment program in training unless it has a corresponding commitment to human resource and competitive strategies that require multiskilled, committed and motivated workers. Moreover, no firm will achieve the full returns to an aggressive

human resource development policy unless it has a concurrent strategy to:
1) establish employment security provisions and 2) to fully utilize the skills by providing opportunities for workers to solve problems, influence their work environment, and share in the benefits of improved productivity and corporate performance.

Regardless of the specific training policies selected, there appears to be a need at the state and/or national level for greater coordination of training efforts by firms, local, state and federal governments, unions, schools and other training institutions in the United States. Our major economic competitors have developed comprehensive plans to train and develop their workers so that they will be able to respond to the demands associated with new technologies and increasing international competition. As Europe moves towards greater coordination in 1992 it has been proposed in various European Communities Commission documents that a major part of the 'Social Dimension' of 1992 will be to expand training programs. The reason behind this is that "the process of introducing new technologies would be economically more viable and socially more acceptable if accompanied by effective training and greater motivation for both workers and managerial staff" (see Venturini, 1988, pp. 95). The U.S. will be challenged to do the same in the area of skill formation if it hopes to remain competitive.

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